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Analyzing the Relation Between Academic Competition and Altruism

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PSYC 2402: Statistics and research methods

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Abstract

Altruistic behavior involves the constant tradeoff between the benefit of the actor and the recipient, whereby behavior can range from purely cooperative (very altruistic) to purely competitive (very *unaltruistic*). This behavior is known to change depending on social setting and environmental competition, indicating a multifaceted mechanism by which altruism is affected. Little is known, however, about the effect of competition in the academic setting specifically on altruistic behavior and whether this *academic* altruism differs from daily life altruism. Using a validated scale, this study examines the effect of the presence of a daily life altruism cue and varying levels of academic competition on displayed academic altruism. The results indicate that there is no effect cue presence, competition level or the interaction of the two on displayed academic altruism thus suggesting that higher academic competition does not cause students to act less altruistically and provides the possibility that daily life altruism may in fact differ from academic altruism. This study poses questions about the nature of academic altruism and provides a foundation for further study into the interaction between daily life altruism, academic altruism and competition.

Keywords: altruism; academic competition; academic altruism; daily life altruism; altruism scale

Analyzing the Relation Between Academic Competition and Altruism

The fields of psychology and sociology have substantial literature which focuses on the role of altruism in people's daily lives and how it affects us, those around us, and the way we interact with the world (Batson & Powell, 2003; Unger, 1991; Warneken & Tomasello, 2009). Altruism is a part of human nature, seen even in human infants, that has been selected for through evolution (Warneken & Tomasello). As a means of kin selection and inclusive fitness, those who demonstrate more altruistic behavior are selected for, increasing altruistic behavior in human throughout evolution (Hoffman, 1981). Altruistic behavior involves the constant tradeoff between the benefit of the actor and the recipient, where benefit to the recipient and harm to the actor characterize what is defined as altruistic behavior (Gardner & West, 2004). This behavior can be influenced by both one's innate brain wiring and structure as well as social surrounding (Diekhof et al., 2014). Having a connection to the receiver, for example, causes an actor to act more altruistically, with increased altruism demonstrated when the receiver is part of the actor's ingroup as opposed to their outgroup, as shown in a study by Diekhof and colleagues. Additionally, the perceived altruistic tendency of the receiver in a competitive setting affects the amount of altruism demonstrated by the actor, further illustrating the complex relation between social surrounding and altruistic behavior (Danielson, 2002). Thus, considering altruism's dynamic nature, it proves an interesting variable to study regarding how it is affected by one's social environment.

Considering altruism's nature as an operationalized construct, there are many different ways in which researchers have set out to measure altruism, none of which can be qualified as definitively valid or correct, as is the nature of a construct (Johnson et al., 1989; Rushton et al., 1981; Sawyer, 1966). A commonly employed measure of altruism, however, is a self-report measure of altruistic actions or intentions (Johnson et al.; Rushton et al.). Many of these measures focus on what is called daily life altruism, defined, as expected, as altruistic actions which may take place in daily life, such as helping a stranger, giving money to charity or helping a friend move (Rushton et al.). However, rather than use a

self-report measure of daily life altruism, one of the foundational papers which attempts to quantify altruistic personality in individuals focuses instead on altruistic behavior in the context of academic achievement (Sawyer). The scale, posited by Sawyer in 1966, asks individuals to consider a scenario and, within that, their preferences for the grade they (a student) get in a course in comparison to the grade another student gets, ranging from both A's to both C's. From this, the scale is able to quantify this behavior in a way which ranks individual on a scale of strictly cooperative to strictly competitive (ie. very altruistic to very *unaltruistic*). At its extreme, this scale represents the idea that an actor defined as strictly competitive exclusively prefers his own benefit at the expense of the receiver, thus preferencing his success *in addition to* the receiver's failure. What is not known, however, is how academic competition can influence where an individual falls on the spectrum of strictly competitive to strictly cooperative, which this study aims to better understand.

The current state of competition within the academic realm is immense, particularly as it pertains to obtaining spots in prestigious university and graduate programs (Khan, 2012; Bergin & Cooks, 2000). Students have reported high levels of competition, especially when it comes to grades, as well as monitoring the grades of the other individuals as part of this constant competition for academic success (Bergin & Cooks). Considering this high competition environment in which students are immersed and invested, it offers an ideal setting for this study to analyze the effect of competition on altruistic tendencies. However, considering the context of academics in comparison to daily life, I became curious how the aforementioned measure of altruism in an academic setting, what I will now call *academic* altruism, relates to that of daily life altruism. Knowing that students now face significant pressure regarding competition for spots at elite graduate or medical programs, I hypothesize that even normally very altruistic individuals can display low levels of academic altruism when faced with high levels of competition (Khan; Bergin & Cooks). However, I believe that academic and daily life altruism are still connected by way of the influence of social setting (Diekhof et al., 2014). Even when faced with high

competition, I hypothesize that individuals who are shown examples of daily life altruism prior to the task will demonstrate more altruistic tendencies. This is based on the idea that altruistic behaviors increase with the perceived altruism of the receiver and reminding the actor of altruistic tendencies in others will likely increase how altruistic they view their academic competition as by way of Mead's (1934) idea of the "generalized other" (Danielson, 2002). Thus, this study will focus on the level of academic altruism demonstrated within the framework of two variables which include the presence or lack of competition and the presence or lack of a cue meant to inspire daily life altruism.

Hypotheses

1. There will be a main effect of competition such that those in the high competition condition will demonstrate lower academic altruism.
2. There will be a main effect of cue such that those who receive the cue will demonstrate higher levels of academic altruism.
3. There is an interaction effect between competition presence and cue presence such that the effect of the level of competition depends on the presence of the cue.

Method

Participants

One hundred participants were recruited and selected from the pool of current Trinity students. No demographic was targeted or excluded from selection. Informed consent was obtained from all participants prior to the start of the study. Exclusion criteria for participation included being under the age of 18, not being a current Trinity student or not being able to give informed consent.

Sampling Procedures

Participants were recruited by email for the study. One hundred individuals were selected initially from a pool of acquaintances. Data collection stopped after two weeks since recruitment of the participants after 40 responses had not been obtained, which was the previously designated cut-off place.

Measures

The dependent variable which measures the participant's self-reported level of (academic) altruism has been validated and cited extensively in literature (Sawyer, 1966). The dependent variable used here offers a slight variation on this model, with changes being made only in the prompt presented and the method by which participants fill out the matrix. The prompt is altered to insert the high and low competition conditions, as well as the method of preference selection which opts for a list rather than a matrix for ease of understanding. This change is a limitation of this experiment as its impact on the validity of the measure is unknown.

Procedure

Data was collected via a Qualtrics survey sent by email to the aforementioned sample of selected Trinity students. Participants were randomly assigned to either the altruism cue condition or the no altruism cue condition. Those in the cue condition were then shown a brief video meant to inspire daily altruism (see appendix). This was then followed by two questions to ensure that those in the condition watched the video. Those in the no cue condition received no cue and proceeded straight to the following step. Following this, each participant saw a prompt in accordance with the competition condition which they were randomly placed into. Placement into these conditions was independent of the cue conditions to which they were previously assigned, and the sample was to be evenly split between the two conditions. There were two possible competition conditions: high competition and low

competition. The respective prompts, modified from those presented in Sawyer's (1966) original study, which were shown to the participants based on their condition are as follows:

It is the beginning of the term and you are taking an important course in your area of specialization in which you hope to attend graduate school to study. It so happens that there is only one other student in the course and this student is competing with you for a spot in a prestigious graduate program. You are both taking the course for credit and each of you will receive one of the grades, A, B, or C. Since there are three possible outcomes for each of you, and the instructor assigns grades independently, there exist nine possible combinations of outcomes, ranging from both A's to both C's.

It is the beginning of the term and you are taking an important course in your area of specialization in which you hope to attend graduate school to study. It so happens that there is only one other student in the course and this student also plans to attend graduate school but not in your field of interest and so is not competing with you for a spot. You are both taking the course for credit and each of you will receive one of the grades, A, B, or C. Since there are three possible outcomes for each of you, and the instructor assigns grades independently, there exist nine possible combinations of outcomes, ranging from both A's to both C's.

After receiving these prompts, the participants received identical instructions on how to rank the various grade combinations which were organized randomly within the Qualtrics software (see appendix). After this, the study was concluded, and the participants were thanked for their participation.

Results

Of the 100 participants recruited, 25 responses were collected and distributed among the four conditions: cue/high competition ($n = 4$), cue/low competition ($n = 6$), no cue/high competition

($n = 9$) and no cue/low competition ($n = 6$). All 25 responses were complete, and no missing data needed to be accounted for. Additionally, all individuals in the cue condition answered the comprehension questions correctly, indicating that all watched the cue video. Ties in rankings were individually recoded using the average ordinal position (mid-rank system) as was suggested by the original scale (Sawyer, 1966). The value for alpha (the quantitative measurement of altruism calculated by the scale) was then calculated for each participant's response using the formula presented by Sawyer (1966) which can be found in the appendix. The alpha value is representative of the participant's displayed academic altruism and served as the dependent variable.

This study sought to understand the effects of academic competition and daily life altruism cues on one's displayed level of academic altruism. In accessing this, a factorial ANOVA was conducted to determine the relation between the factors. I hypothesized that there would be effects of cue and competition, such that high levels of competition and no cue presence (independently) would cause a decrease in displayed academic altruism. I also hypothesized that there would be an interaction between cue and competition such that the effect of competition will depend on the absence of the cue. The results indicate no statistical support for any of these three hypotheses. I found no main effect of cue presence, $F(1,21) = 1.91, p = .182, \eta^2 = .08$, such that the presence of absence of the cue had no effect on the displayed level of academic altruism. Additionally, there was no main effect of competition, $F(1,21) = 1.04, p = .321, \eta^2 = .05$, such that the level of competition, high or low, had no effect on the displayed level of academic altruism. Finally, I found no interaction effect between cue and competition, $F(1,21) = .02, p = .724, \eta^2 = .01$, such that the effect of the level of competition did not depend on the presence of the cue. Thus, I can conclude that neither cue presence, level of competition nor the interaction between the two have a statistically significant effect on the displayed level of academic altruism of the individual.

Discussion

The results of this study showed no significant effects of cue or competition, concluding that neither cue nor competition affects displayed academic altruism (see Figure 1). While this does not support the proposed hypotheses, it does provide an interesting analysis. Considering the immense academic pressure students face and that many have reported monitoring other's grades as part of this competition, I expected that a change in the level of competition would impact the displayed altruism, with high levels of competition causing the individual to act less altruistically (Khan, 2012; Bergin & Cooks, 2000). Literature indicates that displayed altruism can change depending on social surrounding, but these results suggest that, in the context of academics, competition is not one of these social factors which can affect altruism (Diekhof et al., 2014). This finding provides both a hopeful conclusion as well as additional questions. Primarily, it suggests that students do not prioritize the failure of the other student over their own success, even in highly competitive conditions, indicating a degree of cooperativity among student rather than sole competition. However, it also raises the question of what competition *does* affect when it comes to academics and altruism. It would be interesting, thus, to examine in a more in-depth manner the effects of competition on students' cooperative behavior, competitive behavior such as grade monitoring or cheating, and feelings of academic stress.

The results also indicated that there was no effect of cue presence on displayed academic altruism. I formed this hypothesis based on the idea that the scale itself is a measure of altruism in general (as opposed to academic altruism as a separate entity than daily life altruism) and based on the assumption that reminding one of altruistic tendencies would make them more likely to assume the other student is altruistic, thus making the student themselves act more altruistically (Sawyer, 1966; Danielson, 2002). However, the data do not support this hypothesis. Rather, it appears that the daily life altruism cue presence does not increase academic altruism. Thus, this raises the question of whether this result is because the cue does not in fact cause the student to assume more altruistic intentions of

the student they are competing against or because daily life altruism and academic altruism are separate entities where a cue for one does not affect the presence of the other. This is an interesting concept to be explored further, including investigation into the differences in daily life and academic altruism, which this study did not explicitly test, as well as the effect of cuing on how the participant views the altruism level of their peer. Additionally, the relationship between competition, daily life altruism and academic altruism should be examined further. As the results indicated no interaction effect between cue presence and competition level, future studies should consider investigating how competition affects daily life altruism or, in a study with a larger sample size and more power, whether competition or cue presence has a larger effect on academic altruism, an area where there is a critical lack of scientific literature.

Limitations

Small sample sizes made this study underpowered and unable to generalize to the broader population. A more robust surveying would help reveal any underlying differences that may exist which this study was not able to see. Additionally, the survey did not include questions to assess the feelings of competition or altruism beyond the scale itself, making it hard to know if the manipulation, particularly that of the cue, truly made the participant feel more altruistic. However, considering that altruism is an operationalized construct which is hard to measure beyond a self-report scale of daily life altruism or the scale used in this study, this may be difficult to accomplish. Finally, if this experiment was to be done again, additional thought should be put into the use of a control cue rather than the absence of one in order to differentiate effects of the cue from any confounding effects of the video itself.

Final Thoughts

While this study lacks statistically significant results, it still yields (socially) significant and interesting findings with regard to the nature of academic altruism. It provides the hopeful idea that students will act altruistically despite high academic competition and also raises the question of whether

or not academic competition truly differs from daily life altruism. Further investigation is needed to discern the underlying complexities of the relations between academic competition and altruism.

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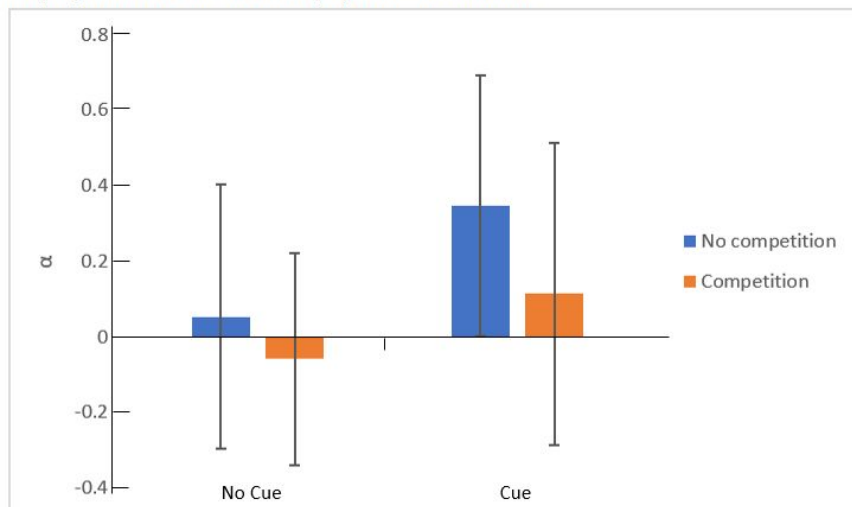
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Figures

Figure 1

Displayed academic altruism (α) across conditions



Note. Error bars represent one standard error. Alpha of 1 represents purely cooperative (most altruistic) and -1 represents purely competitive (least altruistic).

Appendix

Academic Altruism Matrix as Presented to Participant

[Insert prompt according to assigned condition here]. Rank your preference for these nine outcomes in the following situation. Place the numbers 1 (first choice) to 9 in the cells of the accompanying table, indicating your preference for each of the combinations of grades for you and the other student. If you have absolutely no preference between two combinations, indicate this by placing the same number in both of the cells (ie. **you can have ties**).

- ☐ You get an A, they get an A
- ☐ You get an A, they get a B
- ☐ You get an A, they get a C
- ☐ You get a B, they get an A
- ☐ You get a B, they get a B
- ☐ You get a B, they get a C
- ☐ You get a C, they get an A
- ☐ You get a C, they get a B
- ☐ You get a C, they get a C

Daily Life Altruism Video

<https://www.youtube.com/watch?v=EsZKAFV6C-E>

Alpha calculation as presented in Sawyer (1966)

$$a = \frac{(\text{summed ranks for C to other}) - (\text{summed ranks for A to other})}{(\text{summed ranks for C to self}) - (\text{summed ranks for A to self})}.$$